

SEQUENCE LISTING

<110> Mark J. Graham
Andrew T. Watt

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      Ile Leu Arg Leu Glu Ser Glu Glu Thr Met Val Leu Glu Ala His Asp
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107

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Ser Ser Pro Leu Ala Leu Gly Ile Pro Met Tyr Ser Ile Ile Thr Pro	
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Asn Val Leu Arg Leu Glu Ser Glu Glu Thr Ile Val Leu Glu Ala His	
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Asp Ala Gln Gly Asp Ile Pro Val Thr Val Thr Val Gln Asp Phe Leu	
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Lys Arg Gln Val Leu Thr Ser Glu Lys Thr Val Leu Thr Gly Ala Ser	
70 75 80	
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Gly His Leu Arg Ser Val Ser Ile Lys Ile Pro Ala Ser Lys Glu Phe	
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Asn Ser Asp Lys Glu Gly His Lys Tyr Val Thr Val Val Ala Asn Phe	
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115 120 125	
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Tyr Leu Phe Ile Gln Thr Asp Lys Thr Ile Tyr Thr Pro Gly Ser Thr	
130 135 140 145	
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Val Leu Tyr Arg Ile Phe Thr Val Asp Asn Asn Leu Leu Pro Val Gly	
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Lys Thr Val Val Ile Leu Ile Glu Thr Pro Asp Gly Ile Pro Val Lys	
165 170 175	
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Arg Asp Ile Leu Ser Ser Asn Asn Gln His Gly Ile Leu Pro Leu Ser	
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Phe Tyr Glu His Ala Pro Lys Gln Ile Phe Ser Ala Glu Phe Glu Val	
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230 235 240	
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Thr Phe Tyr Tyr Ile Asp Asp Pro Asn Gly Leu Glu Val Ser Ile Ile	
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260 265 270	
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Phe Gly Val Gln Asp Gly Asp Lys Lys Ile Ser Leu Ala His Ser Leu	
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Lys Val Leu Met Glu Gly Val Arg Pro Ser Asn Ala Asp Ala Leu Val	
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Gly Lys Ser Leu Tyr Val Ser Val Thr Val Ile Leu His Ser Gly Ser	
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Pro	Phe	Asp	Leu	Met	Val	Phe	Val	Thr	Asn	Pro	Asp	Gly	Ser	Pro	Ala	
370					375					380					385	
agc	aaa	gtg	ctg	gtg	gtc	act	cag	gga	tct	aat	gca	aag	gct	ctc	acc	1259
Ser	Lys	Val	Leu	Val	Val	Thr	Gln	Gly	Ser	Asn	Ala	Lys	Ala	Leu	Thr	
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caa	gat	gat	ggc	gtg	gcc	aag	cta	agc	atc	aac	aca	ccc	aac	agc	cgc	1307
Gln	Asp	Asp	Gly	Val	Ala	Lys	Leu	Ser	Ile	Asn	Thr	Pro	Asn	Ser	Arg	
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caa	ccc	ctg	acc	atc	aca	gtc	cgc	acc	aag	aag	gac	act	ctc	cca	gaa	1355
Gln	Pro	Leu	Thr	Ile	Thr	Val	Arg	Thr	Lys	Lys	Asp	Thr	Leu	Pro	Glu	
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tca	cgg	cag	gcc	acc	aag	aca	atg	gag	gcc	cat	ccc	tac	agc	act	atg	1403
Ser	Arg	Gln	Ala	Thr	Lys	Thr	Met	Glu	Ala	His	Pro	Tyr	Ser	Thr	Met	
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His	Asn	Ser	Asn	Asn	Tyr	Leu	His	Leu	Ser	Val	Ser	Arg	Met	Glu	Leu	
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Lys	Pro	Gly	Asp	Asn	Leu	Asn	Val	Asn	Phe	His	Leu	Arg	Thr	Asp	Pro	
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Gly	His	Glu	Ala	Lys	Ile	Arg	Tyr	Tyr	Thr	Tyr	Leu	Val	Met	Asn	Lys	
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Gly	Lys	Leu	Leu	Lys	Ala	Gly	Arg	Gln	Val	Arg	Glu	Pro	Gly	Gln	Asp	
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ctg	gtg	gtc	ttg	tcc	ctg	ccc	atc	act	cca	gag	ttt	att	cct	tca	ttt	1643
Leu	Val	Val	Leu	Ser	Leu	Pro	Ile	Thr	Pro	Glu	Phe	Ile	Pro	Ser	Phe	
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Ser Cys Gln Arg Arg Ala Arg Leu Ile Thr Gln Gly Glu Asn Cys Ile	
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Lys Ala Phe Ile Asp Cys Cys Asn His Ile Thr Lys Leu Arg Glu Gln	
725 730 735	
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His Arg Arg Asp His Val Leu Gly Leu Ala Arg Ser Glu Leu Glu Glu	
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Asp Ile Ile Pro Glu Glu Asp Ile Ile Ser Arg Ser His Phe Pro Gln	
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Ile Ser Thr Lys Val Met Asn Ile Phe Leu Lys Asp Ser Ile Thr Thr	
790 795 800	
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Trp Glu Ile Leu Ala Val Ser Leu Ser Asp Lys Lys Gly Ile Cys Val	
805 810 815	
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Ala Asp Pro Tyr Glu Ile Arg Val Met Gln Asp Phe Phe Ile Asp Leu	
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Arg Leu Pro Tyr Ser Val Val Arg Asn Glu Gln Val Glu Ile Arg Ala	
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Val Leu Phe Asn Tyr Arg Glu Gln Gln Glu Leu Lys Val Arg Val Glu	
850 855 860 865	
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Leu Leu His Asn Pro Ala Phe Cys Ser Met Ala Thr Ala Lys Asn Arg	
870 875 880	
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Tyr Phe Gln Thr Ile Lys Ile Pro Pro Lys Ser Ser Val Ala Val Pro	
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Tyr Val Ile Val Pro Leu Lys Ile Gly Gln Gln Glu Val Glu Val Lys	
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Ala Ala Val Phe Asn His Phe Ile Ser Asp Gly Val Lys Lys Thr Leu	
915 920 925	
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Val Pro Ala Ala Asp Leu Ser Asp Gln Val Pro Asp Thr Asp Ser Glu	
965 970 975	
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Ala Val Asp Gly Glu Arg Leu Lys His Leu Ile Val Thr Pro Ala Gly	
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Cys Gly Glu Gln Asn Met Ile Gly Met Thr Pro Thr Val Ile Ala Val	
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cac tac ctg gac cag acc gaa cag tgg gag aag ttc ggc ata gag aag	3179
His Tyr Leu Asp Gln Thr Glu Gln Trp Glu Lys Phe Gly Ile Glu Lys	
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Arg Gln Glu Ala Leu Glu Leu Ile Lys Lys Gly Tyr Thr Gln Gln Leu	
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gcc ttc aaa cag ccc agc tct gcc tat gct gcc ttc aac aac cgg ccc	3275

Ala Phe Lys Gln Pro Ser Ser Ala Tyr Ala Ala Phe Asn Asn Arg Pro	
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ccc agc acc tgg ctg aca gcc tac gtg gtc aag gtc ttc tct cta gct	3323
Pro Ser Thr Trp Leu Thr Ala Tyr Val Val Lys Val Phe Ser Leu Ala	
1075 1080 1085	
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Ala Asn Leu Ile Ala Ile Asp Ser His Val Leu Cys Gly Ala Val Lys	
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Trp Leu Ile Leu Glu Lys Gln Lys Pro Asp Gly Val Phe Gln Glu Asp	
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Pro Tyr Thr Val Ala Ile Ala Gly Tyr Ala Leu Ala Leu Met Asn Lys	
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Cys Leu Thr Phe Lys Val His Gln Tyr Phe Asn Val Gly Leu Ile Gln	
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Cys His Ser Glu Met Cys Arg Cys Ala Glu Glu Asn Cys Phe Met Gln	
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Gln Ser Gln Glu Lys Ile Asn Leu Asn Val Arg Leu Asp Lys Ala Cys	
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Ser His Ile Lys Cys Arg Asn Ala Leu Lys Leu Gln Lys Gly Lys Lys
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Tyr Leu Met Trp Gly Leu Ser Ser Asp Leu Trp Gly Glu Lys Pro Asn
1605 1610 1615

acc agc tac atc att ggg aag gac acg tgg gtg gag cac tgg cct gag 4955
Thr Ser Tyr Ile Ile Gly Lys Asp Thr Trp Val Glu His Trp Pro Glu
1620 1625 1630

gca gaa gaa tgc cag gat cag aag tac cag aaa cag tgc gaa gaa ctt 5003
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1635 1640 1645

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